

## Determinants of the development of school and university education in China

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### Determinanty rozwoju szkoły i szkolnictwa wyższego w Chinach

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**Streszczenie:** Edukacja i jej rozwój wpływają na przemiany w sferze społeczno-gospodarczo-kulturalnej określonego państwa. System oświaty i wychowania obejmuje zespół instytucji oświatowo-wychowawczych istniejących w określonym czasie w jakimś kraju, które są ze sobą powiązane pod względem organizacyjnym i funkcjonalnym, a sposób ich powiązania stanowi o strukturze organizacyjnej całego systemu. System edukacji w Chinach rozwijał się w ciągu bardzo długiego czasu. Do najważniejszych cech współczesnej edukacji należą: wielowiekowe tradycje kształcenia oraz docenianie znaczenia edukacji; model edukacji podbudowany wartościami, takim jak współpraca i podporządkowanie; system edukacji nastawiony wyłącznie na zdawanie egzaminów; olbrzymi nakład czasu ucznia przeznaczany na naukę i ciężka praca własna; dominujące podające metody kształcenia; duża waga przywiązywana do pracy w grupach. Sukces grupowy jest często bardziej ceniony niż sukces indywidualny.

**Słowa kluczowe:** edukacja, uwarunkowania środowiskowe i społeczne edukacji, egzaminy, umiejętności, rozwój

**Key words:** *education, environmental and social education, exams, skills development*

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## INTRODUCTION

Education and its development is of interest to every state, because its level and the level of education of its citizens determine changes in the socio-economic and cultural fields. Thus, the educational system should be understood as a set of training institutions operating in a country at a given time. They are connected in organisational and functional terms on the basis of rules established by the country's educational policy, and the way they are connected influences the organisational structure of the entire system (Dereń 2011). A part of the system is a school system that embraces all kinds and levels of schooling existing at a given time. The organisation of the educational system embraces its external, or horizontal, structure (e.g. comprehensive or vocational schools) and its vertical structure (e.g. 1st-level schools, or primary ones, 2nd-level or secondary ones, and 3rd-level or higher ones), as well as its internal structure, i.e. the organisation of a school as an institution, its division into faculties, sections, and classes.

Although the term 'schooling' is narrower than 'education', in practice they are used as synonym<sup>S\*</sup> The educational system is a basic social system in a state because it bears the responsibility for endowing graduates with the knowledge, skills and foundations that will allow them to find a suitable place on the labour market in the future. The term 'education' is usually understood as "a conscious, organised human activity intended to produce specific changes in one's personality" (Okoń 1998a). Okoń (2007) then goes on to specify that it embraces "all processes and influences intended to transform people, primarily young ones and children, in accordance with the educational ideals and targets obtaining in a society". Scharfenberg (1998, after Rajkiewicz et al. 1998) explains that education is "a continuous process of passing on facts, skills, value systems, social norms, and the cultural heritage of a community involving such specific social institutions as schools, kindergartens and other units". In turn, Kwieciński (1990) treats education as "processes and influences (including a person's own efforts) that contribute to his or her development, or the effects of those processes, or all the social institutions and practices intended to educate, bring up, or adapt individuals". "Education becomes one of the most important, if not THE most important, challenge of the future for (...) society and the state. This follows from the significance of education for development, whether economic, since in accordance with the human capital theory, knowledge is a condition for activating and absorbing growth factors, or more broadly, human development, because an educated person has a greater choice and a chance to develop his or her talents and fulfil aspirations" (Golinowska 2000).

The basic goals of education, according to Okoń (1998b), are: (a) social – through education society seeks to ensure itself optimum development conditions by making young people develop attitudes and skills that will help them to carry out social tasks in the future, and (b) individual goals – education brings good and happiness to individuals. The primary institution supporting the development of an individual and society is the school defined as "an institution involved in the instruction and upbringing of children, young people and adults in accordance with the goals, tasks and educational conceptions and programmes adopted in a given society" (op. cit.).

The entire Chinese educational system has survived from the imperial times; it rests on a system of examinations introduced in China as early as the 2nd century ([www.miedzykulturowa.org.pl/cms/edukacja-w-chinach.html](http://www.miedzykulturowa.org.pl/cms/edukacja-w-chinach.html)). That is why education is treated very seriously, and the Chinese traditionally set great store by the education of their children. "When Europe was still immersed in the darkness of the Middle Ages, China introduced an advanced educational system with the famous civil service examinations taken to be admitted to the ranks of imperial administration for which the candidates prepared for years. This system functioned from the 7th to the 20th centuries. The Chinese are convinced that by learning hard their children will be able to overtake their contemporaries in the race for a good position in this highly hierarchical society of almost 1.4 billion people. (...) Chinese schools divide into ordinary, good and the best. Those excellent schools require excellent results in exams in order to be admitted to them" ([www.oswiata.abc.com.pl/czytaj/-/artykul/chiny-wysoki-poziom-edukacji-pozwoli-stworzyc-najlepszych-pracownikow-na-swiecie](http://www.oswiata.abc.com.pl/czytaj/-/artykul/chiny-wysoki-poziom-edukacji-pozwoli-stworzyc-najlepszych-pracownikow-na-swiecie)).

In China illiteracy was widespread until as late as the 1960s-1970s. It was only Mao Tse-tung who introduced changes and reformed spelling, which greatly facilitated learning in the absence of an alphabet. Today, as a result of successive reforms and the obligatory 9-year schooling, 95% of Chinese children of appropriate age go to school. What is characteristic is that Chinese pupils are only satisfied with the highest position and that the society generally does not tolerate weakness ([www.miedzykulturowa.org.pl/cms/edukacja-w-chinach.html](http://www.miedzykulturowa.org.pl/cms/edukacja-w-chinach.html)).

It is worth having a look at the system of old examinations, initially oral and then both oral and written, that rested on Confucian books and commentaries to them, other classic books, the skill to write poetry, works on assigned subjects, calligraphy and recitation (op. cit.). Sometimes palace exams were announced in order to find specialists in the knowledge of official documents, mathematics or physics. In the times of the last dynasties, especially the Qing dynasty ruling in the years 1644–1912, the system was the most complex: it embraced district, provincial and

imperial examinations. They were held every three years, in three stages, and lasted three days. The candidate who passed all the stages had the right to take the most important examination, on the passing of which he was admitted to the Imperial Academy of Sciences (op. cit.).

#### FOUNDATIONS OF THE DEVELOPMENT OF THE EDUCATIONAL SYSTEM IN CHINA

The knowledge of the specific features of the geographical environment of a country is very important. But one should be aware that the environment and living conditions affect the processes of perception and cognition, systems of beliefs, general development, and also education. A lot of valuable information can be found in Nisbett's *The Geography of Thought* (2003), which explains the genesis of activities, also education, undertaken in Asian states, including China. "The collective or interdependent nature of Asian society is consistent with Asians' broad, contextual view of the world and their belief that events are highly complex and determined by many factors" (op. cit., p. 14). This is a holistic approach emphasising relations between events and objects, seeking harmony and uniformity at various planes (hence the love of monophonic music).

Three different philosophies have crucially affected life and education in China: Taoism, Confucianism and Buddhism. "Each philosophy emphasized harmony and largely discouraged abstract speculation. (...) The sign of the Tao, which means "the Way" to exist with nature and with one's fellow humans, consists of two forces in the form of a white and a black swirl. (...) Aside from Taoism's teachings about opposition, contradiction, change, and cycles, it stood for a deep appreciation of nature, the rural life, and simplicity. (...) It also means finding the Tao – "the Way" to live in the world" (Nisbett 2003, pp. 12–15). Confucius' concern, in turn, was with "the proper relations among people, which in his system were hierarchical and strictly spelled out" (Nisbett 2003, p. 15). He urged his adherents to uphold the Doctrine of the Golden Mean – to be excessive in nothing. Any form of confrontation, including polemics, was not approved by a group. Although "in the 'hundred of schools' times between 600 and 200 BC cultural discussion was admissible, whatever resembled public dispute was unwelcome. Those schools also promoted the development of systematic instruction. Confucianism stressed economic well-being and education. And since an individual works not for self-benefits but for the entire family, "a promising young man was expected to study for the government examinations with the hope of becoming a magistrate. If he did, his whole family benefited economically from his position" (Nisbett 2003, pp. 15–16). Both

philosophies focused on a search for "the Way" of living in the world, they intertwined and shaped an approach to life and work. From Buddhism, which came from India, the Chinese have absorbed epistemology, or the theory of knowledge. "All three orientations shared concerns about harmony, holism, and the mutual influence of everything on almost everything else" (op. cit., p. 17). That is why social life in China rests on interdependences, a harmony of people with nature, and interpersonal harmony. "The Chinese tendency to focus on relationships in a complex, interconnected field is exemplified by the practice of feng shui" (op. cit., p. 23).

"But, as philosopher Hajime Nakamura notes, the Chinese advances reflected a genius for practicality, not a penchant for scientific theory and investigation. And as philosopher and sinologist Donald Munro has written, "In Confucianism there was no thought of knowing that did not entail some consequence for action" (Nisbett 2003, p. 8). "The Chinese have been credited with the original or independent invention of irrigation systems, ink, porcelain, the magnetic compass, stirrups, the wheelbarrow, deep drilling, the Pascal triangle, pound locks on canals, fore-and-aft sailing, watertight compartments, the sternpost rudder, the paddle-wheel boat, quantitative cartography, immunization techniques, astronomical observations of novae, seismographs, and acoustics" (Nisbett 2003, pp. 7–8).

Therefore the knowledge of philosophical-ethical foundations is necessary to understand the way in which also the modern Chinese people tend to act in various fields, including education.

#### THE EDUCATIONAL SYSTEM IN CHINA

Modern China has a diversified and rich educational offer. The Chinese school is regarded as one of the most rigorous and restrictive ones in the world, with great weight attached to learning, primarily by memory, and to copying. Chinese pupils wear uniform<sup>S\*</sup> The school year starts on 1 September and is divided into four semesters lasting 9–11 weeks, separated by two-week vacations. Children spend a lot of time at school, which depends on where they live. For example, in southern China pupils are at school on average five days a week, from 7:00 to 18:00, while in the north this can even be seven days, from 6:00 to 17:00 (<http://szkola.wp.pl/kat,114204,title,Sz-kola-w-Chinach-czyli-dlugie-godziny-sciences-i-disciplina,wid,15337381,wiadomosc.html?ticaid=115360>).

"A typical day of the Chinese pupil, especially from a school in a large city where the influence of Western culture is considerable, starts at 9:00 and ends about 15:30. Pupils come to school punctually. Formally a lesson starts with the sound of a bell, as in Poland. (...) Any leave from classes or truancy are out of the question,

and anyway, the average Chinese pupil would not even think of anything like that because the young Chinese set great store by education" (op. cit.). Irrespective of the level of education, the basic instruction methods applied and approved of are expository ones (the assimilation of knowledge), and pupils' activity is only limited to listening, taking notes, and remembering. Questions or a dispute on the part of the pupil are practically ruled out. "Great weight in the Chinese educational system is also attached to work in groups. Group success is often more highly appreciated than individual success" (op. cit.).

According to the Chinese law, all citizens must attend school for at least 9 years (primary and secondary school being obligatory), and the educational system rests on similar assumptions and has a similar structure as the one in Poland. It has the following levels: kindergarten, primary school, lower secondary school, higher secondary school, a university or another higher school, and a post-diploma educational institution (Fig. 1).

1. Kindergarten education is intended for children 3 to 6 years old, and is divided into three stages embracing, respectively, children aged 3-4, 4-5, and 5-6. Kindergarten is optional and has to be paid for, with fees differing widely depending on the location (the countryside, a town).

2. Primary education embraces children aged 6 to 11. It lasts 5 or 6 years, depending on the programme a school has adopted. Primary schools are state-run and free. But the child sent to a school in a given city (district) must be one registered there (having the so-called hukou). In China the registration of people coming from other localities is very hard, especially in big cities like Beijing or Shanghai, which are destinations of internal migration in this country. Children born contrary to the one-child policy are treated as 'illegal', and until their 'legalisation' they have not got a hukou and hence no right to learn.

The chief subjects taught in primary school are: Chinese, English, mathematics, nature, music, fine arts, and physical education. Pupils can also attend various interest groups.

3. Secondary school is attended by young people aged 12 to 17. It divides into a lower, or so-called junior high school and an upper, or senior high school, each lasting 3 years. The schools operate in two sectors: the state and the private one. The lower school is compulsory and its attendance is free, while the senior school is no longer compulsory and pupils have to pay minimum fees. To get to a senior high school the candidate has to pass an exam called zhongkao, organised in July. Private schools of this level often offer specialised education and practically prepare their graduates for an occupation. The qualifications obtained in private and state-run schools are treated on a par.

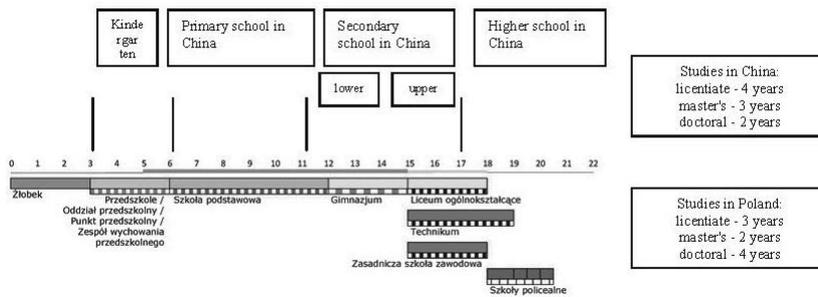


Fig. 1. Structure of the educational system in China as compared with that in Poland: a comparative approach (the graphics presenting the Polish system taken from Eurydice resources; modification by I. Piotrowska)

Explanation:

nursery school kindergarten primary school lower secondary school (gimnazjum) comprehensive secondary school technical secondary school vocational secondary school post-secondary schools

Explanation: This system has been in force in Poland since the year 2014/2015; the line between the 5th and 15th years of life denotes full obligatory education time. Starting with 2015/2016, primary school will be obligatory for 6-year-olds, who will graduate at the age of 12, not 13, as has been the case so far.

*Ryc. 1. Struktura systemu edukacji w Chinach na tle systemu w Polsce – ujęcie porównawcze; (grafika przedstawiająca polski system pozyskana z zasobów Eurydice; modyfikacja I. Piotrowska)*

*Objaśnienie: Powyższy system obowiązuje w Polsce od roku 2014/2015; linia zaznaczona pomiędzy 5–15 rokiem życia oznacza obowiązkowy pełen czas edukacji w Polsce. Od 2015/2016 szkołę podstawową w Polsce obowiązkowo będą rozpoczynać 6-latki, a kończyć w wieku 12 lat, a nie jak to było dotychczas 13 lat.*

Source/Źródło: Eurydice; <https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php/Countries>.

Graduates of lower secondary schools usually continue learning in higher secondary schools, although some of them choose schools preparing for an occupation or higher vocational schools, which last 3 to 5 years. At the secondary level, the subject 'nature' taught in primary school is replaced by individual disciplines, like physics, geography, chemistry, and biology. In this it is similar to the Polish system.

On completion of the last year pupils take a state examination called gaokao, organised in June, an equivalent of the Polish maturation exam (matura), the result of which decides about their admission to a university ([www.polish.cri.cn/177/2007/03/21/2@58209.htm](http://www.polish.cri.cn/177/2007/03/21/2@58209.htm)). The exam is very hard and requires much preparation and effort, hence it is long remembered by pupils and their families.

A specific feature of the Chinese school is permanent control of the pupil's knowledge; every month the pupil takes a test, and every semester an exam. In

secondary school there is no system of obtaining marks, as is the case in Poland; what count are only the results of the two examinations, zhongkao and gaokao, which decide about the school to which the pupil will qualify next. A similar system of the control of knowledge and skills has been introduced in Poland by the 1999 reform. Another characteristic of China, irrespective of the region, is that it is schools that are always the most splendid buildings, while in the Western countries those are usually shopping centres.

An educational system geared to passing examinations and inflated ambitions of parents cause Chinese children to suffer very strong pressure from very early years. Many of them study all day long (at school, during additional or remedial classes). As a result, they have no free time to develop their own interests. It is a fact that they pass examinations in the form of tests successfully, but in the opinion of many experts and employers, on graduation they do not show any creativity, self-reliance and skills in solving problems ([www.oswiata.abc.com.pl/czytaj/-/artykul/chiny-wysoki-poziom-edukacji-pozwoli-stworzyc-najlepszych-pracownikow-na-swiecie](http://www.oswiata.abc.com.pl/czytaj/-/artykul/chiny-wysoki-poziom-edukacji-pozwoli-stworzyc-najlepszych-pracownikow-na-swiecie)).

"According to the English-language weekly *Global Times*, Shanghai pupils devote an average of nearly 14 hours per week to their homework, or twice as long as pupils in other countries. This is amplified by after-school tuition – remedial classes in school subjects and private lessons in music, calligraphy, dance, Chinese, foreign languages, etc. All this in order to get the best possible results at exams, especially the gaokao" (op. cit.).

"The approach of most parents, geared exclusively to passing exams, makes it hard for pupils to achieve a good understanding of the material and limits their skill to use the obtained knowledge in practice. (...) Children with the best memory and the ability to adapt to the system achieve success, but their basic asset is the ability to carry out orders", as has been stated by a consultant on education quoted by *Financial Times*. In his opinion, "such pupils are good as lower-ranking workers because they are easy to manage, but they do not possess the abilities required of managers" (op. cit.).

4. University education is offered by several types of school: universities, colleges, institutes, and polytechnics. While educating young people, those institutions also carry out academic and scientific research. Higher schools offer a variety of courses, e.g. preparing for an occupation, or licentiate, master's and doctoral courses.

A condition for taking up studies at a university or college is the state entrance exam gaokao. All candidates are admitted, irrespective of age. Selection rests on the examination results and depends on the number of examinees, and the admission to a university is a highly competitive process. It is impossible not to pass a gaokao;

what is crucial here is the result: the higher the result, the better the school that the pupil can choose. This decides about his or her entire later life. Because of the stiff competition, every pupil strives for the best result possible.

There are several kinds of higher studies: higher vocational studies last 2–3 years, licentiate studies usually take 4 years, master's studies, 3 years, and doctoral studies, 2 years. Medicine takes 6–7 years to study. It is worth noting that in the Chinese People's Republic higher education is not free, and while for Chinese students fees and costs of living take up a considerable proportion of their home budgets, to foreign students all fees may seem very low ([www.polish.cri.cn/177/2007/03/21/2@58209.htm](http://www.polish.cri.cn/177/2007/03/21/2@58209.htm)). However, there are also universities (especially the prestigious ones) that are not only free, but also offer material assistance to the best students.

The best higher schools in China include (<http://www.perspektywy.pl/>):

- Beijing University, often regarded as an 'Asian Oxford', for years the best school in China, recently ranked by the Times magazine as the best school in entire Asia; its chief fields are history, archeology, language studies, and literature studies;
- Tsinghua University, the second best university in China, also located in Beijing, which owes its high reputation to exact sciences; and
- Fudan University in Shanghai, taking third place, and renowned for its art studies and biochemistry.

With its more than 70 higher schools, Beijing is the centre of the higher educational system in China. Shanghai has about 20 universities, the best known including Fudan, Jiao Tong (today the sixth university in China, with very well developed engineering and exact sciences), Tong Ji (mostly architecture and engineering), and the East China Normal University (specialising in language courses and instructing future teachers).

For more than a decade, substantial funds have been invested in the development of education in China. An example is the East China Normal University, which is a part of two big governmental projects intended to set up world-class schools. This approach guarantees that instruction will take place in modern buildings and make use of the latest technologies. Also, the Chinese government, which stresses the weight of education and puts it in the first place, pursues the strategy of the country's development through it. Consistent efforts are also made to deepen the reform of the educational system by implementing the obligatory 9-year schooling. Worth emphasising is the fact that investment in education tends to grow at all levels, and that the society is encouraged to seek instruction in various ways and in a variety of forms ([www.perspektywy.pl](http://www.perspektywy.pl)).

In the recent years the Chinese government and universities have also tried to interest foreign students in studying in China. What can attract them are, for example, reduced tuition fees, sometimes even full exemption from payment, as well as scholarships.

#### A DAY AT A CHINESE SCHOOL

A lesson at a Chinese school lasts 40 minutes and is followed by a 10-minute break. Breaks and lessons are announced by music from loudspeakers. Classes start with morning exercises at 8:20. At 8:40 regular lessons begin and last till 11:55. The 11 o'clock break is 5 minutes longer because children take eye-relaxing exercises then (because of the poor eyesight of Chinese children, those exercises are obligatory for every child at every school). At 11:55 there is a break for a meal, which is served to all pupils, teachers and other school personnel. Pupils eat it in classrooms, the staff in a canteen. After the meal the break continues until 14:00. This is a leisure time for children, but they do not leave school then. They can make use of a TV room, play in the schoolyard, do their homework, etc. At 14:00 there starts another round of classes which, depending on the pupils' age, last to 15:35 or 16:15, when they go home, older ones unassisted, younger ones under the care of guardians. One might add that although classes stop at 16:15, children leave 5 minutes later because it is their duty to tidy the classroom (<http://2olatwchinach.blox.pl/2011/12/szkolnictwo-cz1.html>).

#### THE OECD PROGRAMME FOR INTERNATIONAL STUDENT ASSESSMENT (PISA)

When characterising the educational system in China and its predilection for examinations, it is also worth noting its effects. This has been made possible by a research conducted at an international scale since 2000: the Programme for International Student Assessment (PISA). The research is carried out by an international consortium controlled by the Organisation for Economic Cooperation and Development (OECD) and representatives of its member states. The OECD, established in 1960, is an international organisation of an economic profile uniting 34 highly advanced and democratic states. The OECD PISA project is the widest-ranging international research on the skills of 15-year-old pupils, conducted every 3 years in mathematics, reading and interpretation, and reasoning in natural sciences. It has been assumed that in each round of the study one of those fields is a leading one. Combined with the main stream of the PISA research are additional components

in the form of 'national options' (e.g. a study of pupils of schools above the lower secondary level), as well as optional international studies (e.g. with the use of computer techniques), or tests expanding the research scope to include new areas.

In accordance with the assumptions, the results of the PISA projects are supposed to yield answers to the following questions ([www.ifspan.waw.pl/pliki/pisa\\_2009.pdf](http://www.ifspan.waw.pl/pliki/pisa_2009.pdf)):

1. How far are young people prepared to take up challenges of the future?
2. Can young people analyse and reason efficiently, and express their thoughts clearly?
3. Are they prepared to keep the ability to learn all life long?
4. How to shape school programmes and educational systems to help them in this matter?
5. How to reduce differences in life chances among young people through education?

This paper presents the results of the PISA 2012 study when the leading field was mathematical skills. It embraced 510,000 pupils from 65 countries and regions (in the case of China) aged 15 in the year preceding the study. The tests in the PISA 2012 edition were expanded to include financial skills ([www.oecd.org/pisa/keyfindings/pisa-2012-results-overview.pdf](http://www.oecd.org/pisa/keyfindings/pisa-2012-results-overview.pdf)).

In Poland the study is conducted by a team of experts from the Institute of Philosophy and Sociology of the Polish Academy of Sciences ([www.ibe.edu.pl/images/prasa/PISA-2012-raport\\_krajowy.pdf](http://www.ibe.edu.pl/images/prasa/PISA-2012-raport_krajowy.pdf)). The results are presented in a tabular form, the division being into countries where the results did not depart significantly from the OECD average, those where they were better, and those where they were worse than the average. The results in the field of reasoning in natural sciences and mathematical skills in the years 2006–2012 are presented in Table 1.

An analysis of the above results provides information about the educational level of pupils and countries. The population of young persons taking part in the research is representative of individual countries, so the results allow a reliable interpretation after a careful statistical analysis. They can certainly contribute substantially to a proper formulation of educational policies of states.

What deserves special attention is the fact that Hongkong and Shanghai rank at the top in individual studies (Tab. 1). This makes China the leader in education; the leaders are not only Chinese metropolises, but also rural areas. This can be an effect of years-long education, education conditions, and primarily teachers' requirements and pupils' own intensive work for exams (tests). But this is not an objective picture of the educational situation in the whole of China, where conditions and levels vary. This concerns especially migrating pupils ([www.brookings](http://www.brookings).

Table 1. The 10 best countries in the PISA 2012 study (mean results of pupils from the measurement of skills)

*Tabela 1. Zestawienie najlepszych 10 państw w badaniach PISA 2012 (średnie wyniki uczniów z pomiaru umiejętności)*

Mathematics <i>Matematyka</i>		Science <i>Nauki przyrodnicze</i>		Reading <i>Czytanie</i>	
country <i>kraj</i>	points <i>punkty</i>	country <i>kraj</i>	points <i>punkty</i>	country <i>kraj</i>	points <i>punkty</i>
Shanghai (China)	613	Shanghai (China)	580	Shanghai (China)	570
Singapore	573	Hong Kong (China)	555	Hong Kong (China)	545
Hong Kong (China)	561	Singapore	551	Singapore	542
Taiwan	560	Japan	547	Japan	538
Korea	554	Finland	545	Korea	536
Macao (China)	538	Estonia	541	Finland	524
Japan	536	Korea	538	Taiwan	523
Liechtenstein	536	Vietnam	528	Canada	523
Switzerland	531	Poland	526	Ireland	523
Netherlands	523	Liechtenstein	525	Poland	518

Source/Źródło: [http://www.ibe.edu.pl/images/prasa/PISA-2012-raport\\_krajowy.pdf](http://www.ibe.edu.pl/images/prasa/PISA-2012-raport_krajowy.pdf).

edu/research/papers/2013/12/11-shanghai-pisa-scores-wrong-loveless). That is why the entire country was entered for the next edition, PISA 2015, that took place in spring this year.

In the PISA 2015 study that embraced pupils from about 70 countries, the leading field was reasoning in natural sciences. An additional field, as in the previous edition, was financial skills. The results, after close and multi-dimensional analyses, will only be published in December 2016 ([www.cmec.ca/508/Programs-and-Initiatives/Assessment/Programme-for-International-Student-Assessment-%28PISA%29/PISA-2015/index.html](http://www.cmec.ca/508/Programs-and-Initiatives/Assessment/Programme-for-International-Student-Assessment-%28PISA%29/PISA-2015/index.html)).

When examining the PISA 2012 results with reference to Poland (Tab. 1), it should be emphasised that the country found itself in the small group of participants that had improved their scores. Out of the states starting in 2003 with a result close to the OECD average or higher, Poland had improved in the most substantial way ([www.ibe.edu.pl/images/prasa/PISA-2012-raport\\_krajowy.pdf](http://www.ibe.edu.pl/images/prasa/PISA-2012-raport_krajowy.pdf)).

## EDUCATION AND SCIENCE IN CHINA

According to McKinsey&Company forecasts ([www.oswiata.abc.com.pl/czytaj/-/artykul/chiny-wysoki-poziom-edukacji-pozwoli-stworzyc-najlepszych-pracownikow-na-swiecie](http://www.oswiata.abc.com.pl/czytaj/-/artykul/chiny-wysoki-poziom-edukacji-pozwoli-stworzyc-najlepszych-pracownikow-na-swiecie)), in 20 years the Chinese will form the largest class of the best qualified workers in the world. In 2010 over 60% of workers finished education at the secondary level, and this level keeps rising steadily. According to reports, over the last 20 years more than half of the population have reached the maturation exam level, which is of great importance for the development of the country. It should be stressed that the Chinese model promotes the best individuals, creating so-called learning champions. Those who are good and promise well in both sport and school can avail themselves of educational equipment, travels and funds. If someone is good in China, they are really good, in fact excellent (<http://wiadomosci.onet.pl/only-w-onecie/radoslaw-pyffel-chiny-okazaly-sie-panstwem-najskuteczniej-walczacym-z-bieda/hf3k1>).

Among the key factors deciding about the conditions of the development of science and education is its financing. In China the outlays for science are twice as high in terms of the GDP percentage as in the European Union, and six times higher than in Poland. And there is one stipulation: the money assigned for science cannot be used to raise salaries, but must go to something practical, something that will boost the prestige of the state and be useful. And that is why publications by Chinese scholars are read by politicians and decision-makers, and not written for the authors' own satisfaction. The basic, striking difference between scientific activity in Poland and China is the practicality and usefulness of knowledge, which is supposed to serve concrete goals. And this is what China emphasises in particular.

## CHIEF PROBLEMS FACING EDUCATION IN CHINA

(prepared on the basis of <http://wiadomosci.onet.pl/only-w-onecie/radoslaw-pyffel-chiny-okazaly-sie-panstwem-najskuteczniej-walczacym-z-bieda/hf3k1>)

1. The one-child policy in China has produced various consequences. One of them is the huge pressure suffered by children, who have to attend all kinds of additional classes and private lessons from their very early years (a similar tendency can also be observed in Poland recently). The stress produced by the fierce rivalry to get the best possible results, unmet in other countries, determination and discipline can influence people and the entire society. However, this 'success at all costs' approach has slowly been changing.

2. A great problem in China is access to education by children from the poorest families from rural areas, where half of the society lives today. Such pupils have fewer chances to learn, hence they make up a mere few to some dozen per cent of all students in China. In the recent years parents in the countryside have been exempted from school fees (so-called *xuefei*), but this has not quite solved the problem, because some payments still have to be made. Differences in educational conditions are clearly visible in the results of the *gaokao* examination. Besides, some countryside inhabitants see no sense in sending children to school, even in a society like the Chinese one, with its almost religious attitude to education (this being a heritage of Confucianism).

3. There is a problem of children of so-called people's workers, who number close to 200 million. Those are people who in the late 1980s came to large cities on the coast, settled there and set up families. In accordance with the Chinese law, this is immigrated population and its offspring may obtain instruction only in the original place of habitation, i.e. often a few thousand kilometres away in the western regions of China. That is why people's workers have started to organise their own schools, adapting abandoned factory premises for this purpose, instruction being offered there by retired teachers or some parents. The response of local authorities varies, as a rule depending on who rules in the given area, because those schools are illegal. Not surprisingly, this situation gives rise to many serious social conflicts.

4. According to China's Ministry of Education, the dynamic development of information-communication technologies and the mass use of computers and cellular phones can affect the ability of pupils to write Chinese symbols. The problem is that the notation of the Chinese language is in Pinyin, which is an official transcription of standard Mandarin (*putonghua*), the official language, to the Latin alphabet. With the IC technologies available, it is enough to choose appropriate symbols on the keyboard, without the necessity to have the skill to write them.

5. A new development in China is the inflation of diplomas. An example is Shanghai, where there are already tens of thousands of unemployed people with higher education. This is a result of both, their level education and the labour market.

#### COOPERATION OF POLAND AND CHINA IN EDUCATION

According to the latest information, steps have been taken to establish cooperation between the Republic of Poland and the Chinese People's Republic in the field of education ([www.oswiata.abc.com.pl/czytaj/-/artykul/polska-i-chiny-zaciesnia-wspolprace-w-dziedzinie-edukacji](http://www.oswiata.abc.com.pl/czytaj/-/artykul/polska-i-chiny-zaciesnia-wspolprace-w-dziedzinie-edukacji)). At a meeting that took place in July 2015 in Poland, representatives of the two governments discussed Polish-Chinese

cooperation in education. The special fields where cooperation can be reinforced include the economy, science, education, culture, and the regional level. The framework for the development of cooperation is the strategic partnership connecting the two countries since December 2011. A special role in those measures is played by cultural institutes, including the Polish Institute in Beijing. Cooperation is also supposed to embrace academic contacts. Today there are almost half a thousand students from the Central Kingdom in Poland, so Polish universities have worked out special promotional programmes for them, an example being Study in Poland.

### CONCLUSIONS

The educational system in China has developed over a very long time. Today its most important characteristics include:

- 1) centuries-old traditions of schooling and appreciation of its importance;
- 2) an educational model resting on such values as cooperation, collectivism and subordination;
- 3) an educational system geared exclusively to passing examinations;
- 4) a great amount of time pupils devote to learning and their hard individual work;
- 5) greatly inflated ambitions of parents;
- 6) predominance of expository methods of instruction (the role of the pupil being to listen, take notes, and remember);
- 7) great weight attached to work in groups, group success often being appreciated higher than individual success; and
- 8) developing additional skills in such disciplines as chess, ping-pong, playing musical instruments, or dancing.

Thus, an analysis of the educational system of a country should embrace environmental and local determinants, philosophical and ethical theories underlying its cultural system, the values and rules adhered to, and the policy conducted. All those elements have their implications and provide a basis for the development of education. Cooperation between states belonging to different cultural spheres in terms of the economy or education creates conditions for each side to learn, understand and respect the other's world views and approaches, and this can only enrich and develop both sides.

## SUMMING UP

The educational system in China has developed over a very long time. The most important characteristics of modern education in China include: centuries-old traditions of schooling and appreciation of its importance; an educational model resting on such values as cooperation, collectivism and subordination; an educational system geared exclusively to passing examinations; a great amount of time pupils devote to learning and their hard individual work; greatly inflated ambitions of parents; predominance of expository methods of instruction (the role of the pupil being to listen, take notes, and remember); great weight attached to work in groups, group success often being appreciated higher than individual success; and developing additional skills in such disciplines as chess, ping-pong, playing musical instruments, or dancing.

Thus, an analysis of the educational system of a country should embrace environmental and local determinants, philosophical and ethical theories underlying its cultural system, the values and rules adhered to, and the policy conducted. All those elements have their implications and provide a basis for the development of education.

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